

What is claimed is:

1. A multiple image medical information system, comprising:

A. a display device responsive to display signals for generating n medical data images in an image field, where n is an integer, each of said images being in an associated one of n regions of said image field,

B. a multitasking display controller for generating said display signals, including:

i. data device for generating patient data representative of patient-related information, said patient data including m subsets of said patient data, where m is an integer greater than n ,

ii. user select device responsive to user action to select k of said m subsets of said patient data, where k is an integer greater than and less than or equal to n ,

iii. display signal generator responsive to said user select device for generating k of said display signals, each of said k display signals being representative of an associated one of said selected subsets of patient data and being associated with one of said regions of said image field,

whereby said k medical data images corresponding to said k selected subsets of said patient data are displayed on said display devices in the respective associated regions of said image field.

2. A system according to claim 1 wherein at least one of the m subsets of patient data is representative of a plot of at least two measured patient characteristics as a function of a reference parameter on a common scale.

3. A system according to claim 2 wherein said reference parameter is time.

4. A system according to claim 1 wherein for said one subset of patient data said measured characteristics and said reference parameters are selectively determined by a user.

9 5. A system according to claim 1 wherein the data of at least one of said m subsets
10 of patient data corresponds to measured patient characteristics and associated reference
11 parameter values.

1 6. A system according to claim 1 wherein said measured patient characteristics are
2 from the set consisting of blood pressure and others and said associated reference parameters
3 are from the set consisting of time and others.

1 7. A medical information system, comprising:

2 A. a display device responsive to display signals for generating an image,

3 B. a display controller for generating said display signals, including:

- 4 i. means for receiving n sets of data, where n is an integer greater
5 than 1, each data set being representative of medical information,
6 ii. user device responsive to a user action to selectively generate a
7 selection signal representative of one of k subsets of said n data
8 sets, each of said subsets being associated with one of k user job
9 functions or departments, where k is an integer greater than one,
10 iii. means responsive to said selection signal for generating display
11 signals representative of the subset associated with said generated
12 selection signal,

13 whereby said image corresponds to said the subset associated with said generated selection
14 signal.

1 13. The system according to claim 1 wherein said user job functions are selected
2 from the group consisting of doctor, nurse, pharmacist, administrator, insurance coordinator,
3 quality controller, and assistants thereto.

4 26. The system according to claim 1 wherein said departments are selected from the
5 group consisting of medical, pharmacy, administration, finance, insurance, epidemiology,
6 human services, and statistical and academic studies departments.
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9 10. The system according to claim ¹³10 wherein the respective ones of said n sets of
10 data include sets representative of information from the group comprising patient identity and
11 admission information, patient diagnosis information, patient measurement information, patient
12 ¹⁴12 treatment plan information, patient order information, patient treatment information.

1 11. The system according to claim ¹⁴10 wherein one of said user job functions is
2 doctor and said k subsets are selected from the group consisting of patient history, physical
3 examination data, current drug data, problem data, orders, progress notes, and summary
4 reports.

1 12. The system according to claim ¹⁴10 wherein one of said user job functions is
2 nurse and said k subsets are selected from the group consisting of problem data, care plan,
3 orders, and critical pathways.

1 13. The system according to claim ¹⁴10 wherein one of said user job functions is
2 pharmacist and said k subsets are selected from the group consisting of drug orders, drug
3 interactions and drug reference data.

1 14. The system according to claim ¹⁴10 wherein one of said user job functions is
2 administrator and said k subsets are selected from the group consisting of hospitalization days,
3 procedures, and medical staff data.

1 15. The system according to claim ¹⁴10 wherein one of said user job functions is
2 insurance coordinator and said k subsets are selected from the group consisting of patient cost
3 data, risk factor data and claim data.

1 16. The system according to claim ¹⁴10 wherein one of said user job functions is
2 quality controller and said k subsets are selected from the group consisting of procedure time
3 data, staff performance data, and disease/hospitalization data.

1 17. The system according to claim ¹⁴10 wherein one of said user department is
2 medical and said k subsets are selected from the group consisting of patient history, physical

examination data, current drug data, problem data, orders, progress notes, and summary reports.

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18. The system according to claim 10 wherein one of said user department is pharmacy and said k subsets are selected from the group consisting of drug orders, drug interactions and drug reference data.

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19. The system according to claim 10 wherein one of said user department is administration and said k subsets are selected from the group consisting of hospitalization days, procedures, and medical staff data.

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20. The system according to claim 10 wherein one of said user department is finance and said k subsets are selected from the group consisting of patient cost data, procedure cost data, and staff cost data.

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21. The system according to claim 10 wherein one of said user department is insurance and said k subsets are selected from the group consisting of patient cost data, risk factor data and claim data.

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22. The system according to claim 1 wherein said display controller is a programmed digital computer.

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28. The system according to claim 22 wherein said computer having a window-based operating system displaying icons representative of the respective ones of said job functions and departments, and said user device is a pointing device operatively connected to said computer by way of said operating system.

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29. The system according to claim 23 wherein said pointing device is selected from the group consisting of keyboard, light pen, mouse, trackball, touchpad, voice controlled pointer.

1 20 25. The system according to claim 12 wherein said controller includes access means
2 for selectively controlling operability of said user device by users.

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4 26. The system according to claim 19 wherein said access means includes means to
5 control said user device to be interactive for one or more users in a first user set and to be
6 read-only for one or more of said selected subsets for one or more users in a second user set.

1 27. The system according to claim 20 wherein said first user set includes users
2 having the job function of physicians.

1 28. The system according to claim 20 wherein said second user set includes user
2 having the job function of nurse.

1 29. A medical information system, comprising:

2 A. a display device responsive to display signals for generating text in an
3 image field,

4 B. a display controller for generating said display signals, including:

5 i. memory including stored data representative of a plurality of
6 discrete phrases, each of said phrases being a sequence of words,
7 or abbreviations or symbols therefor, representative of a medical
8 condition,

9 ii. user select device responsive a user action to:

10 a. display one or more of said plurality of discrete phrases,

11 b. select a sequence of one or more of said phrases and

12 identify text entry points representative of desired

13 positions of said phrases in said image field,

14 iii. user text entry device responsive to user action to selectively

15 determine text to be deleted from said selected sequence of

16 phrases and additional text to be displayed in said image field at

17 desired positions in said image field in or between said selected

18 phrases,

19 iv. display signal generator responsive to said select device and said
20 text entry device for generating said display signals, said display
21 signals being representative of said selected phrases and said
22 determined text at their respective desired positions in said image
23 field.

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25 30. A system according to claim 29 wherein said user select device is selected from
26 the group consisting of keyboard, lightpen, mouse, trackball, touchpad and speech recognition
27 text generator.

1 31. A system according to claim 29 wherein said user text entry device includes one
2 from the group consisting of a keyboard and a microphone.

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32. ^{patient} ~~A patent~~ treatment and progress monitor system comprising:

- A. a display device responsive to display signals for generating text in an image field,
- B. a memory including stored:
- i. problem data representative of one or more possible problems associatable with a patient,
 - ii. treatment goal data representative of one or more treatment goals associated with each of said possible problems,
 - iii. treatment plan data representative of one or more treatment plans associated with each of said possible problems, and
 - iv. patient data representative of
 - a. said patient,
 - b. one or more unresolved problems associated with said patient, each of said unresolved problems corresponding to one or more of said possible problems, and
 - c. zero, one, or more of said treatments associated with each of said unresolved problems,

- 18 C. a display controller for generating said display signals, said display
19 controller including a user screen entry device selectively responsive to
20 user action to:
- 21 i. generate a display signal representative of the identity of a patient
22 for whom treatment and progress information is to be displayed,
23 and
 - 24 ii. generate a display signal representative of:
 - 25 a. selected problem data corresponding to said unresolved
26 problems for said patient,
 - 27 b. treatment goal data associated with said selected problem
28 data for said patient, and
 - 29 c. treatment plan data associated with said selected problem
30 data for said patient

33. A system according to claim 32, wherein said memory further includes stored
cost data associated with said treatment plan data, said cost data being representative of the
cost of effecting said treatment plans, and

wherein said user screen entry device is selectively responsive to user action to generate a
display signal representative of the cost of said treatment plan associated with said selected
problem data for said patient.

1 34. A system according to claim 32 wherein said user screen entry device is
2 responsive to user action to generate an order signal indicative of a treatment plan to be
3 effected.

1 35. A system according to claim 34 further comprising means for selectively
2 generating a display signal representative of said order signal.

1 36. A system according to claim 33, wherein said memory further includes stored
2 cost data associated with said treatment plan data, said cost data being representative of the
3 cost of effecting said treatment plans, and

wherein said user screen entry device is selectively responsive to user action to generate a display signal representative of the cost of said treatment plan associated with said selected problem data for said patient.

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A medical order information display system, comprising:

- A. a display device responsive to signals to generate a medical data image;
- B. storage device for storing data representative of patient orders,
- C. order device responsive to user action to generate and store order data in said storage device, said order data being representative of patient orders, said order data for a patient including:
 - i. order data representative of the identity of the prescriber of a prescription,
 - ii. i.d. data representative of the identification of said patient,
 - iii. drug data representative of a drug prescribed for a patient in accordance with the prescription, and
 - iv. administration data representative of prescribed dosage and administration times in accordance with said prescription,
- D. a display controller for generating said display signals, including:
 - i. selectively operative means for generating said display signals wherein at least information representative of said i.d. data, said drug data, and said administration data is displayed on said display device,
 - ii. selectively operative administrator device responsive to user action to generate and store in said storage device, action data representative of an action taken with respect to said patient and one of said prescriptions, said action data for one of said prescriptions being representative:
 - a. the delivery of a drug to said patient
 - b. the identity of said drug delivered to said patient, and
 - c. the dose and time of said drug delivered to said patient,

- iii. monitor means for monitoring said order data for one or more of said patients and for detecting when action data does not correspond correct fulfillment of said order data and in responsive to thereto, generating a display signal representative of an alarm.

38. The system according to claim 37 wherein said monitor means generates in conjunction with said alarm display signal, an additional alarm from the group consisting of audible alarm, visual alarm and data alarm.

39. A system according to claim 37 wherein said order data further includes: authentication data representative of a encrypted identifier uniquely associated with said prescription, and

wherein said user device further includes means for generating by a user an access request associated with said authentication data for a selected one of said prescriptions, and

wherein said display generator includes means for confirming that said access request corresponds to said authentication data for said prescription and upon such confirmation, enabling said user device to modify said data for said patient and for preventing modification of said order data otherwise.

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A medical information calculator display system, comprising:

- A. a display device responsive to display signals to generate a medical data image,
- B. a display controller for generating said display signals, including:
- i. storage device for storing:
- a. at least two primary level computer programs for selectively effecting the determination of an associated first level intermediate value from a plurality of primary values in accordance with a predetermined relationship between said primary values, wherein at least one of said

primary values is representative of a measured parameter of a patient,

b. zero, one or more intermediate level computer programs for selectively effecting the determination of an associated second level intermediate value from at least one of said first level intermediate values and a primary value representative of a measured parameter of a patient, in accordance with a predetermined relationship between said one of said first level intermediate values and said primary values,

ii. first memory means for storing said primary values other than those representative of measured patient parameters, said first memory means including data values representing said primary values other than those representative of measured patient parameters,

iii. second memory means for storing said primary values representative of measured patient values, said second memory means including data values representative of fewer than all of said primary values representative of measured patient parameters,

iv. user device responsive to user actions to generate a request signal representative of a request to display a computed value, said computed value corresponding to a value defined by a combination of said predetermined relationships;

v. processor means responsive to said request signal to invoke one or more of said primary level programs and zero, one or more of said intermediate level programs to effect the computation of said computed value, and further including:

a. means operative when all necessary primary values representative of a measured patient parameter are

- 43 resident in said storage devices, for generating said
44 display signal whereby said computed value is displayed
45 on said display device, and
46 b. means for determining occasions when a primary value
47 representative of one of said primary values representative
48 of a measured patient parameter is not resident in said
49 storage device, and in response to such determination,
50 operative for generating a display signal whereby a
51 prompt identifying said non-resident primary value is
52 displayed in said display device.

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